CINCH

D SUBMINIATURE CONNECTORS*

*Manufactured Under License Agreement with ITT Cannon Electric, Inc.

CINCH ELECTRONIC COMPONENTS

D SUBMINIATURE CONNECTOR

CATALOG CM-46

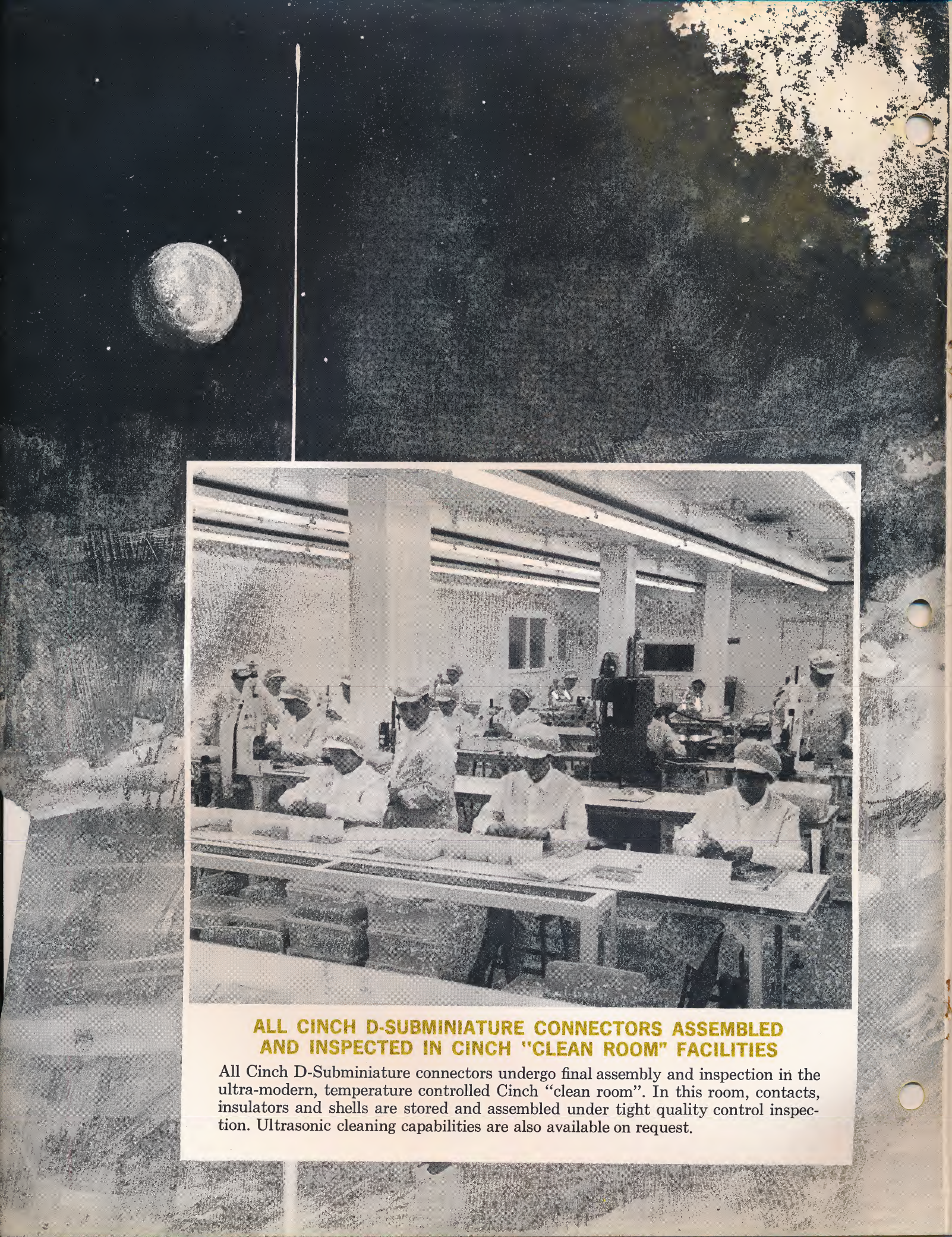
MAY, 1964

FOR USE IN . . .

Aircraft
Guided Missiles
Marine Equipment
Communications
Test Equipment
Audio/Video Equipment
Medical Apparatus
Computers
Business Machines
Industrial Equipment
Geophysical Instruments
Space Research

CINCH MANUFACTURING COMPANY
1026 South Homan Ave., Chicago, Illinois 60624

A DIVISION OF UNITED-CARR INCORPORATED, BOSTON, MASSACHUSETTS



ALL CINCH D-SUBMINIATURE CONNECTORS ASSEMBLED AND INSPECTED IN CINCH "CLEAN ROOM" FACILITIES

All Cinch D-Subminiature connectors undergo final assembly and inspection in the ultra-modern, temperature controlled Cinch "clean room". In this room, contacts, insulators and shells are stored and assembled under tight quality control inspection. Ultrasonic cleaning capabilities are also available on request.

GENERAL DESCRIPTION

D Subminiature Connectors described in this ... d for applications where space and weight ... ions. These high contact density con... ar... es... ly well-suited for aircraft, missile and ... allations. Although designed essentially ... and-panel installations, D series connectors may be ... apted for cable attachment by means of accessory junction ... ells with integral clamps.

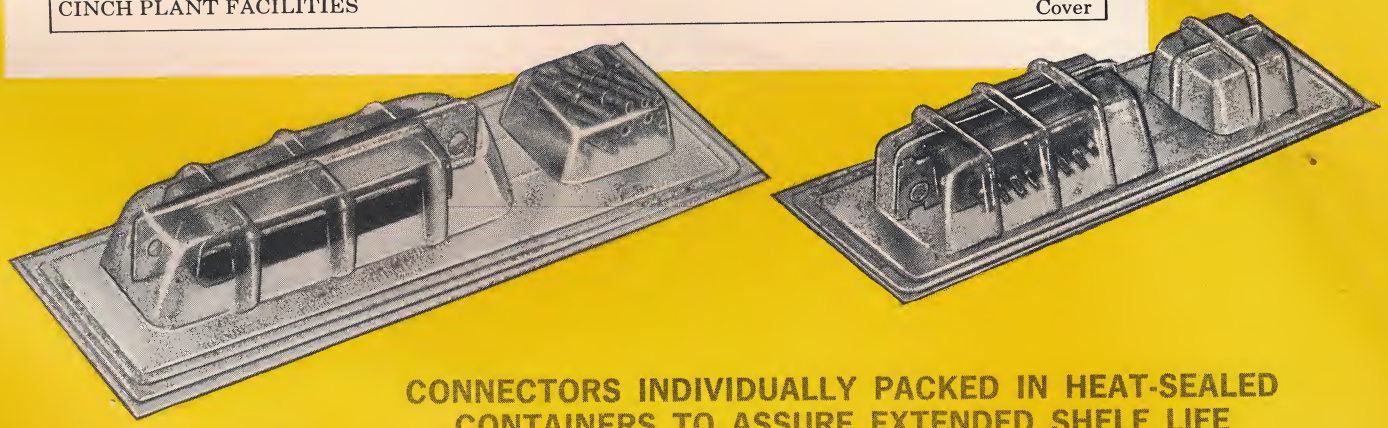
In addition to the original D series with two-piece insulators, CINCH now offers Golden D connectors with monoblock insulators utilizing crimp snap-in removable or standard solder pot contacts. Hermetically sealed D series connectors are also available with solder pot or eyelet type termination.

All D Subminiature connectors will inter-mate if insert arrangements correspond. These connectors are designed to meet or exceed most of the requirements of MIL-C-8384 Rev. B.

A wide range of insert arrangements is offered accomodating up to 50 contacts accepting standard AWG wire as indicated in the individual specifications. Combination layouts are available, with provisions for coaxial and/or high voltage contacts. Printed circuit terminations are also available. The versatility of the D series is further enhanced by the variety of insulating materials and finishes, as well as a complete line of accessories.

The D Subminiature series is handled by leading electronic distributors throughout the country. Questions regarding modifications of these designs or any connector requirement should be addressed to your local CINCH representative and will receive his immediate attention.

INDEX



CONNECTORS INDIVIDUALLY PACKED IN HEAT-SEALED CONTAINERS TO ASSURE EXTENDED SHELF LIFE

To protect D-Subminiature connectors from contamination and other corrosive elements in the air, Cinch individually packs each connector in heat-sealed polyvinyl-chloride containers (as shown) with an inert gas, oxygen-free atmosphere. This assures every customer of extended shelf lift. A separate compartment is also provided in each container for the loose crimp-type contacts supplied with the Golden D, Mark II connector. Connectors can also be packed in individual polyethylene bags if desired.

GENERAL INFORMATION

Cinch D*M Plugs feature solder pot contacts in a monobloc insulator for improved temperature characteristics and increased moisture resistance. Two insulator types are available: (a) combination layouts with coaxial and/or high voltage contacts plus standard AWG wire contacts, and (b) layouts with standard AWG wire contacts only. The five amp* solder pot contacts accommodate wire sizes up to #20 AWG stranded wire. Socket contacts are of the closed entry type. Operating temperatures of insulators range from −65°F to +300°F.

Combination layouts are supplied with unfilled coaxial and/or HV contact cavities. Coaxial and HV contacts must be ordered separately, and may be used interchangeably in any of the layouts listed. HV contacts accommodate wire sizes up to #20. Coaxial contacts (with crimp or solder type terminations) and HV contacts are snap-in and removable. Solder type coaxial and HV contacts have captivated center contacts.

Standard coaxial and HV plugs contain female center contacts; receptacles contain male center contacts. Special reversed versions are available. Pin connector assemblies accommodate coaxial and HV plugs only; socket assemblies accommodate receptacles. Connector assemblies and contact inserts are matched and color coded to ease assembly. Pins and plugs are coded red, sockets and receptacles are coded blue. No insertion tool is required. Coaxial and HV inserts may be removed with Cinch Tool CET-C6 or CET-C6A.

Five basic shell sizes are available. Polarization is by means of the keystone cornered shell. Coupling is by friction; locking accessories are available. Shells with float mounts are also available.

Printed circuit plugs are listed on page 5 with other popular modifications. For additional modifications and special plugs, consult factory. Accessories such as junction shells are shown on pages 18 and 19.

**Military rating of #20 contacts or wires is 1.5 amps average, and 7.5 amps maximum. See explanation on page 20.*

MATERIALS AND FINISHES

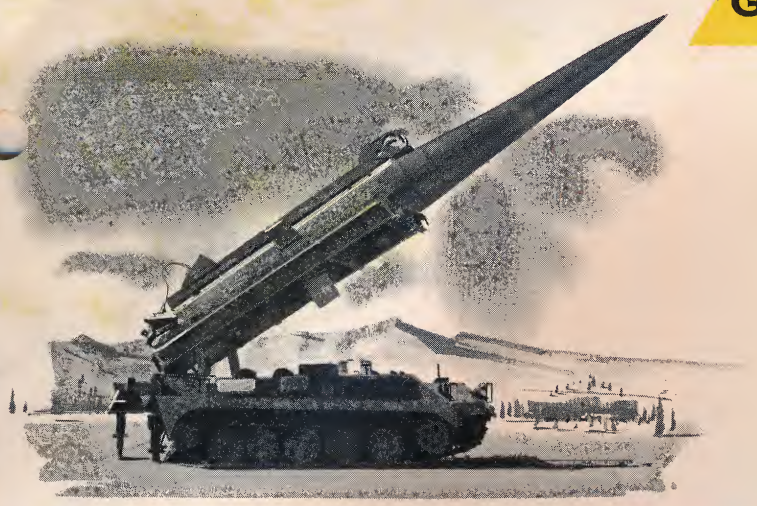
SHELLS:		Steel, cadmium plated with yellow chromate supplementary coating.
INSULATORS:		Diallyl phthalate, glass fibre filled, per MIL-M-14F, Type SDG, forest green color, monobloc construction.
#20 CONTACTS:		Pins and sockets: brass, gold plated (.00003) over silver plate (.0002).
COAXIAL CONTACTS:	OUTER CONTACT	Plug: Brass, gold plated (.00003) over silver plate (.0002). Receptacle: Beryllium copper, gold plated (.00003) over silver plate (.0002).
	CENTER FEMALE CONTACT	Phosphor bronze, gold plated (.00003) over silver plate (.0002).
	CENTER MALE CONTACT	Brass, gold plated (.00003) over silver plate (.0002).
	INSULATOR	Teflon
HIGH VOLTAGE CONTACTS:	SOCKET CONTACT	Phosphor bronze, gold plated (.00003) over silver plate (.0002).
	PIN CONTACT	Brass, gold plated (.00003) over silver plate (.0002).
	INSULATOR	Nylon (temperature range: −65°F to +250°F).

For listing of applicable specifications see page 20.

PERFORMANCE DATA

VOLTAGE RATING:	See tabulation on page 20.
INSULATION RESISTANCE:	Greater than 5,000 megohms, determined in accordance with MIL-STD-202A, Method 302.
CONTACT VOLTAGE DROP:	(#20 contacts) 2.67 millivolts maximum per amp when tested in accordance with MIL-C-8384B, Paragraph 4.6.4.
INDIVIDUAL CONTACT SEPARATION FORCE:	1 to 8 ounces.
MOISTURE RESISTANCE:	Exceeds test requirements of MIL-STD-202A, Method 106.†
VIBRATION:	Exceeds test requirements of MIL-STD-202A, Method 204.†
SHOCK:	Exceeds test requirements of MIL-STD-202A, Method 202A.†
CORROSION RESISTANCE:	Exceeds requirements of 50 hour exposure to salt spray in accordance with MIL-STD-202A, Method 101A, Condition B.†
HIGH POTENTIAL:	MIL-STD-202A, Method 301.†
TEMPERATURE CYCLING:	MIL-STD-202A, Method 102A, Condition D.†

†As referenced in MIL-C-8384B.



ORDERING NOMENCLATURE

D A M — 15 — P — 1
D A M F — 7W2 — S (C33)

- Modification
- Contact type
- Insert arrangement
- Float mount
- Class
- Shell size
- Prefix

NOMENCLATURE EXPLANATION

PREFIX — Series identification

SHELL SIZE — Five basic shell sizes: E, A, B, C, and D

CLASS — M: Monobloc insulator

FLOAT MOUNT — Stainless steel washers and rivets

INSERT ARRANGEMENTS — See layouts on page 6.

CONTACT TYPE — P for pin; S for socket

MODIFICATIONS

SHELL	(F115)	With #4-40 clinch nuts rear mounted in flange rivet holes.
CONTACT	(A106)	Heavy hard gold plate (.0001) over copper flash.
FINISH	(A115)	Heavy hard gold plate (.0001) over silver plate (.0002).
	(A125)	Heavy soft gold plate (.0001) over copper flash.
INSULATOR MATERIAL	(C31)	Diallyl phthalate, asbestos filled, per MIL-M-14F, Type MDG.
	(C33)	Diallyl phthalate, glass fibre filled, per MIL-M-19833, Type GDI-30.

PRINTED CIRCUIT TERMINALS — Terminals .040 diameter by .125 nominal beyond barriers for use on boards of .094 nominal thickness. For greater board thicknesses, consult factory. Information also available on plugs with right angle printed circuit terminations.

To order, add dash number, i.e.: DEM-9P-3

	ORDERING CODE NUMBER	
SHELL SIZE	FOR PIN	FOR SOCKET
DEM-9	—3	—6
DAM-15	—2	—7
DBM-25	—1	—8
DCM-37	—1	—6
DDM-50	—1	—4

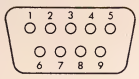
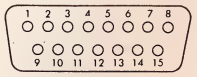
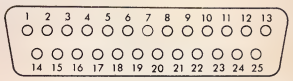
NON-MAGNETIC PLUGS — NMB: Non-magnetic plug with soft rolled brass shell and unmilled, unpigmented glass fibre diallyl insulator (GDI-30). Brass rivets and washers are used for float mounting.

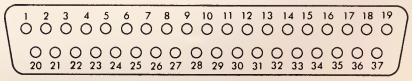
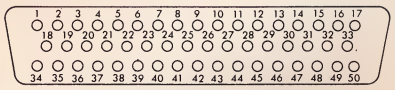
SOLDER POT — Solder pot accommodation for #18 wire is available for use in certain layouts. Consult factory.

Consult factory for other modifications.

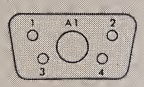
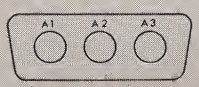
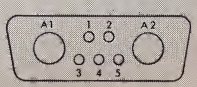
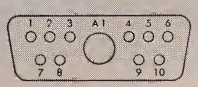
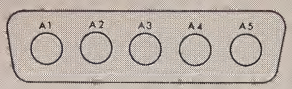
actual size

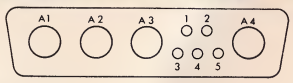
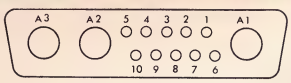
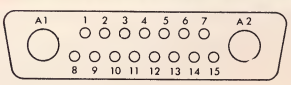
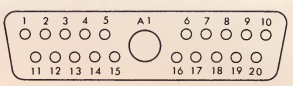
INSERT ARRANGEMENTS BASIC LAYOUTS #20 CONTACTS ONLY

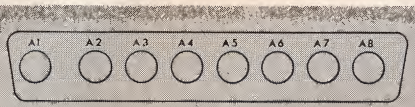
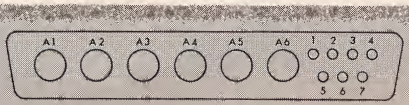
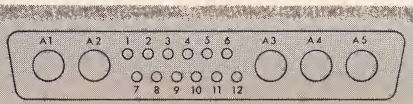
FACE VIEW PIN INSERT			
SHELL SIZE	E	A	B
NO. OF CONTACTS	9	15	25
CONTACT SIZE	#20	#20	#20

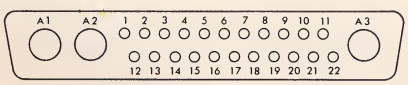
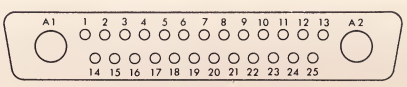
FACE VIEW PIN INSERT		
SHELL SIZE	C	D
NO. OF CONTACTS	37	50
CONTACT SIZE	#20	#20

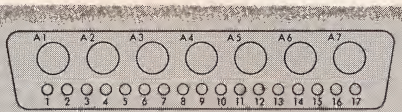
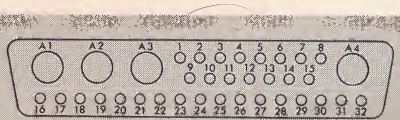
COMBINATION LAYOUTS #20 CONTACTS WITH COAXIAL AND/OR HV CAVITIES*

FACE VIEW PIN INSERT					
SHELL SIZE	E	A	A	A	B
LAYOUT	5W1	3W3	7W2	11W1	5W5
NO. OF CONTACTS	4	0	5	10	0
CONTACT SIZE	#20	–	#20	#20	–
COAX. OR HV CAVITIES	1	3	2	1	5

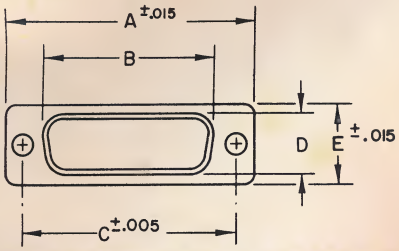
				
SHELL SIZE	B	B	B	B
LAYOUT	9W4	13W3	17W2	21W1
NO. OF CONTACTS	5	10	15	20
CONTACT SIZE	#20	#20	#20	#20
COAX. OR HV CAVITIES	4	3	2	1

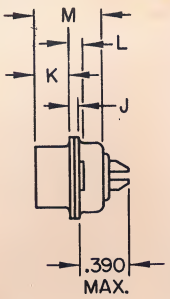
			
SHELL SIZE	C	C	C
LAYOUT	8W8	13W6	17W5
NO. OF CONTACTS	0	7	12
CONTACT SIZE	—	#20	#20
COAX. OR HV CAVITIES	8	6	5

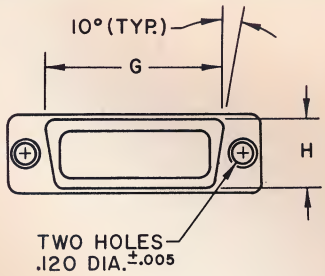
FACE VIEW PIN INSERT		
SHELL SIZE	C	C
LAYOUT	25W3	27W2
NO. OF CONTACTS	22	25
CONTACT SIZE	#20	#20
COAX. OR HV CAVITIES	3	2

FACE VIEW PIN INSERTS		
SHELL SIZE	D	D
LAYOUT	24W7	36W4
NO. OF CONTACTS	17	32
CONTACT SIZE	#20	#20
COAX. OR HV CAVITIES	7	4

*Coaxial and/or HV contacts must be ordered separately. See page 8 for order numbers.







STANDARD SHELL

DIMENSIONS — WITH BASIC LAYOUTS

Part Number by Shell Size	A	B	C	D	E	G	H	J	K	L	M	N
DEM-9P	1.213	.697	.984	.360	.494	.759	.422	.030	.236	.045	.422	.120
DEM-9S	1.213	.640	.984	.308	.494	.759	.422	.030	.243	.045	.429	.120
DAM-15P	1.541	1.025	1.312	.360	.494	1.083	.422	.030	.236	.045	.422	.120
DAM-15S	1.541	.968	1.312	.308	.494	1.083	.422	.030	.243	.045	.429	.120
DBM-25P	2.088	1.583	1.852	.378	.494	1.625	.422	.039	.231	.060	.426	.129
DBM-25S	2.088	1.508	1.852	.308	.494	1.625	.422	.030	.243	.045	.429	.120
DCM-37P	2.729	2.231	2.500	.378	.494	2.272	.422	.039	.231	.060	.426	.129
DCM-37S	2.729	2.156	2.500	.308	.494	2.272	.422	.030	.243	.045	.429	.120
DDM-50P	2.635	2.127	2.406	.484	.605	2.178	.534	.039	.231	.060	.426	.129
DDM-50S	2.635	2.062	2.406	.420	.605	2.178	.534	.030	.243	.045	.429	.120

All tolerances are .010 unless noted otherwise.

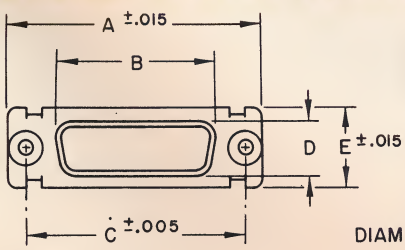
Dimensions B and D are measured as outside dimensions at the bottom of the draw.

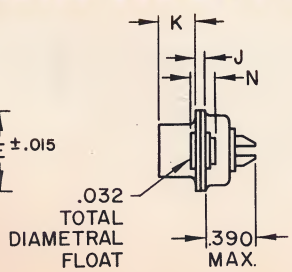
DIMENSIONS — WITH COMBINATION LAYOUTS

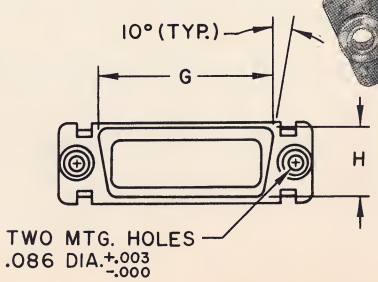
Part Number by Shell Size	A	B	C	D	E	G	H	J	K	L	M	N
DEM-5W1P	1.213	.697	.984	.360	.494	.759	.422	.030	.236	.045	.422	.120
DEM-5W1S	1.213	.640	.984	.308	.494	.759	.422	.030	.243	.045	.429	.120
DAM-3W3P	1.541	1.025	1.312	.360	.494	1.083	.422	.030	.236	.045	.422	.120
DAM-3W3S	1.541	.968	1.312	.308	.494	1.083	.422	.030	.243	.045	.429	.120
DAM-7W2P	1.541	1.025	1.312	.360	.494	1.083	.422	.030	.236	.045	.422	.120
DAM-7W2S	1.541	.968	1.312	.308	.494	1.083	.422	.030	.243	.045	.429	.120
DAM-11W1P	1.541	1.025	1.312	.360	.494	1.083	.422	.030	.236	.045	.422	.120
DAM-11W1S	1.541	.968	1.312	.308	.494	1.083	.422	.030	.243	.045	.429	.120
DBM-9W4P	2.088	1.583	1.852	.378	.494	1.625	.422	.039	.231	.060	.426	.129
DBM-9W4S	2.088	1.508	1.852	.308	.494	1.625	.422	.030	.243	.045	.429	.120
DBM-13W3P	2.088	1.583	1.852	.378	.494	1.625	.422	.039	.231	.060	.426	.129
DBM-13W3S	2.088	1.508	1.852	.308	.494	1.625	.422	.030	.243	.045	.429	.120
DBM-17W2P	2.088	1.583	1.852	.378	.494	1.625	.422	.039	.231	.060	.426	.129
DBM-17W2S	2.088	1.508	1.852	.308	.494	1.625	.422	.030	.243	.045	.429	.120
DBM-17W5P	2.088	1.583	1.852	.378	.494	1.625	.422	.039	.231	.060	.426	.129
DBM-17W5S	2.088	1.508	1.852	.308	.494	1.625	.422	.030	.243	.045	.429	.120
DBM-21W2P	2.088	1.583	1.852	.378	.494	1.625	.422	.039	.231	.060	.426	.129
DBM-21W2S	2.088	1.508	1.852	.308	.494	1.625	.422	.030	.243	.045	.429	.120
DCM-13W6P	2.729	2.231	2.500	.378	.494	2.272	.422	.039	.231	.060	.426	.129
DCM-13W6S	2.729	2.156	2.500	.308	.494	2.272	.422	.030	.243	.045	.429	.120
DCM-25W3P	2.729	2.231	2.500	.378	.494	2.272	.422	.039	.231	.060	.426	.129
DCM-25W3S	2.729	2.156	2.500	.308	.494	2.272	.422	.030	.243	.045	.429	.120
DCM-27W2P	2.729	2.231	2.500	.378	.494	2.272	.422	.039	.231	.060	.426	.129
DCM-27W2S	2.729	2.156	2.500	.308	.494	2.272	.422	.030	.243	.045	.429	.120

All tolerances are .010 unless noted otherwise.
Dimensions B and D are measured as outside dimensions at the bottom of the draw.

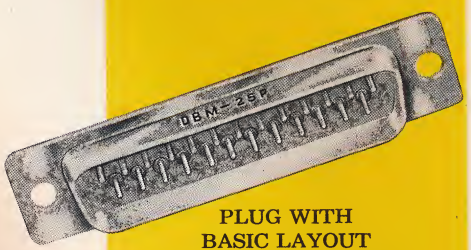
SHELL WITH FLOAT MOUNTS*



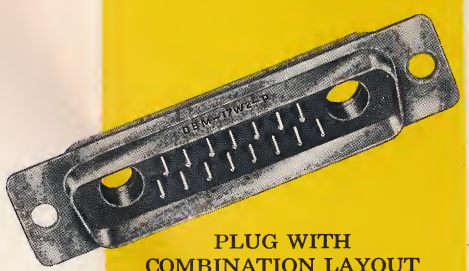




*Add F to Part Nos. in the above table for Float Mounts (Ex. DEMF-5W1P).



PLUG WITH BASIC LAYOUT IN STANDARD SHELL



PLUG WITH COMBINATION LAYOUT IN STANDARD SHELL

SOCKET WITH BASIC LAYOUT IN SHELL WITH FLOAT MOUNTS

SOCKET WITH COMBINATION LAYOUT IN SHELL WITH FLOAT MOUNTS

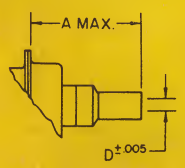
CONTACT TERMINATIONS

COAXIAL COMBINATIONS

For D*M Coaxial Crimp Tools, consult factory.

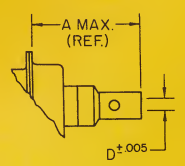
STRAIGHT CRIMP

	Order Number	Contact Ext. from Rear of Flange A	Dielectric Entry D	Overall Length	RG Cables
Plug	DM-53740	.739	.040	.929	196/U
Plug	DM-53740-1	.739	.067	.929	187/U 188/U
Plug	DM-53740-3 DM-53740-5	.847 .847	.110 .125	1.037 1.037	195/U 58/U
Receptacle	DM-53742	.739	.040	.929	196/U
Receptacle	DM-53742-1	.739	.067	.929	187/U 188/U
Receptacle	DM-53742-3 DM-53742-5	.847 .847	.110 .125	1.037 1.037	195/U 58/U



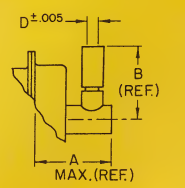
STRAIGHT SOLDER

	Order Number	Contact Ext. from Rear of Flange A	Dielectric Entry D	Overall Length	RG Cables
Plug	DM-53740-5008	.739	.040	.929	196/U
Plug	DM-53740-5001	.739	.067	.929	187/U 188/U
Plug	DM-53740-5002	.847	.110	1.037	195/U
Plug	DM-53740-5005	.847	.125	1.037	58/U
Plug (Short Type)	DM-53740-5000	.670	.040	.860	196/U
Receptacle (Short Type)	DM-53742-5000	.670	.040	.860	196/U
Receptacle	DM-53742-5006	.739	.040	.929	196/U
Receptacle	DM-53742-5001	.739	.067	.929	187/U 188/U
Receptacle	DM-53742-5002	.847	.110	1.037	195/U
Receptacle	DM-53742-5004	.847	.125	1.037	58/U



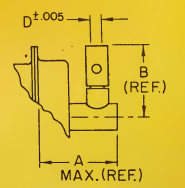
RIGHT ANGLE CRIMP

	Order Number	Contact Ext. from Rear of Flange A	B	Dielectric Entry D	Overall Length	RG Cables
Plug	DM-53741	.530	.492	.040	.734	196/U
Plug	DM-53741-1	.530	.492	.067	.734	187/U 188/U
Plug	DM-53741-3	.530	.601	.110	.734	195/U
Plug	DM-53741-4	.530	.601	.125	.734	58/U
Receptacle	DM-53743-2	.530	.492	.040	.734	196/U
Receptacle	DM-53743-3	.530	.492	.067	.734	187/U 188/U
Receptacle	DM-53743-5	.530	.601	.110	.734	195/U
Receptacle	DM-53743-6	.530	.601	.125	.734	58/U



RIGHT ANGLE SOLDER

	Order Number	Contact Ext. from Rear of Flange A	B	Dielectric Entry D	Overall Length	RG Cables
Plug	DM-53741-5000	.530	.492	.040	.734	196/U
Plug	DM-53741-5001	.530	.492	.067	.734	187/U 188/U
Plug	DM-53741-5003	.530	.601	.110	.734	195/U
Plug	DM-53741-5004	.530	.601	.125	.734	58/U
Receptacle	DM-53743-5000	.530	.492	.040	.734	196/U
Receptacle	DM-53743-5001	.530	.492	.067	.734	187/U 188/U
Receptacle	DM-53743-5003	.530	.601	.110	.734	195/U
Receptacle	DM-53743-5004	.530	.601	.125	.734	58/U



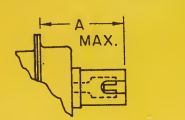
HIGH VOLTAGE COMBINATIONS

STRAIGHT HIGH VOLTAGE

	Order Number	Contact Ext. from Rear of Flange A	Wire Size	Overall Length
Plug	DM-51157	.531	#20	.767
Receptacle	DM-51155	.546	#20	.741

RIGHT ANGLE HIGH VOLTAGE

	Order Number	Contact Ext. from Rear of Flange A	Wire Size	Overall Length
Plug	DM-51157-5000	.531	#20	.767
Receptacle	DM-51155-5000	.500	#20	.707



All tolerances are ± .010 unless noted otherwise.

GOLDEN D MARK II D*SM

GENERAL INFORMATION

Cinch D*SM Plugs feature snap-in crimp type contacts in a monobloc insulator. The monobloc insulator improves temperature characteristics and increases moisture resistance. Snap-in crimp type contacts eliminate soldering and cut assembly and maintenance time. Five basic shell sizes are available: DESM, DASM, DBSM, DCSM, and DDSM. Polarization is accomplished by use of keystone shaped shells. Coupling is by friction with locking accessories available. Shells with float mounts are also available. Crimp terminations accommodate up to #20 AWG stranded wire and are rated for 5 amperes.* In inserting crimp-type contacts, Cinch Tool CIT-20-13 or CIT-20-14 is used. For extracting these contacts, Cinch Tool CET-20-5A is used. Contacts may be crimped with Cinch crimp tool CCT-2016-1, or any crimp tool meeting the requirements of Military Drawing MS3191. Popular modifications are shown on page 10; consult factory for other modifications and special plugs. Operating temperatures for D*SM assemblies with asbestos filled diallyl insulators range from −65°F to +300°F. Accessories, such as junction shells and potting shells, are shown on pages 18 and 19.

MATERIALS, FINISHES AND TYPES

SHELL:	Steel, cadmium plated with yellow chromate supplementary coating.
CONTACTS:	Leaded copper, gold plated (.00003) over silver plate (.0002).
MONOBLOC INSULATOR:	Diallyl phthalate, asbestos filler per MIL-M-14F, Type MDG.
CURRENT RATING:	(#20 contacts) 5 amperes.*
CONTACT TERMINATION:	Crimp-pot, accommodating #20, #22, or #24 AWG stranded wire.
CONTACT TYPE:	Snap-in, removable, crimp. *Not interchangeable with other D Series.*
SOCKET TYPE:	Closed entry
FLOAT MOUNTING RIVETS & WASHERS:	Stainless steel

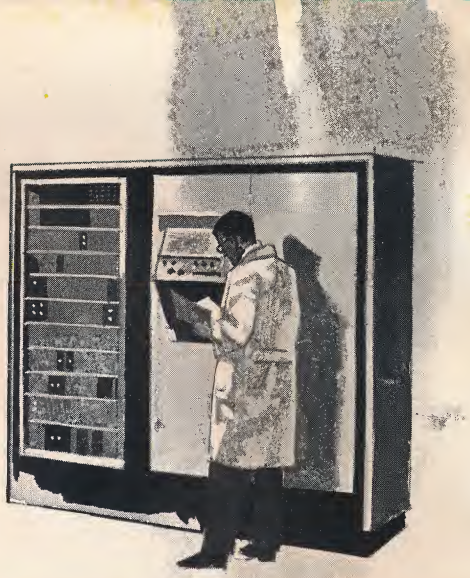
For listing of applicable specifications see page 20.

**Military rating of #20 contacts or wires is 1.5 amps average, and 7.5 amps maximum. See explanation on page 20.*

PERFORMANCE DATA

VOLTAGE RATING:	See tabulation on page 20.
INSULATION RESISTANCE:	Greater than 5,000 megohms, determined in accordance with MIL-STD-202A, Method 302.
CONTACT VOLTAGE DROP:	2.67 millivolts maximum per ampere.
INDIVIDUAL CONTACT SEPARATION FORCE:	1 to 8 ounces.
CONTACT RETENTION FORCE:	8 pounds minimum after first insertion; 5 pounds minimum after tenth insertion.
MOISTURE RESISTANCE:	Exceeds test requirements of MIL-STD-202A, Method 106.†
VIBRATION:	Exceeds test requirements of MIL-STD-202A, Method 204, Condition B.†
SHOCK:	Exceeds test requirements of MIL-STD-202A, Method 202A.†
CORROSION RESISTANCE:	Exceeds requirements of 50 hour exposure to salt spray in accordance with MIL-STD-202A, Method 101A, Condition B.†

†As referenced in MIL-C-8384B.



ORDERING NOMENCLATURE

D E SM — 9 P (F115)
D E SM F — 9 S

- Modification
- Contact type
- Insert arrangement
- Float mount
- Class
- Shell size
- Prefix

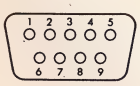
NOMENCLATURE EXPLANATION

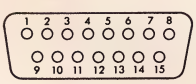
PREFIX	Series identification		
SHELL SIZE	Five basic shell sizes: E, A, B, C and D		
CLASS	SM: Monobloc insulator with snap-in, removable crimp type contacts		
FLOAT MOUNT	Stainless steel washers and rivets		
INSERT ARRANGEMENTS	See diagrams below.		
CONTACT TYPE	P for pin; S for socket		
MODIFICATIONS:	SHELL	(F115)	With #4-40 clinch nuts rear mounted in flange rivet holes.
	CONTACT FINISH	(A106)	Heavy hard plate gold plate (.0001) over copper flash.
		(A115)	Heavy hard gold plate (.0001 thick) over silver plate (.0002 thick).
		(A125)	Heavy soft gold plate (.0001) over copper flash.

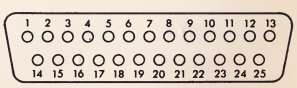
Consult factory for other modifications.

INSERT ARRANGEMENTS

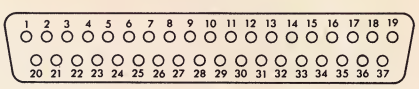
actual size

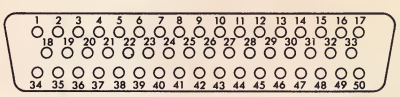






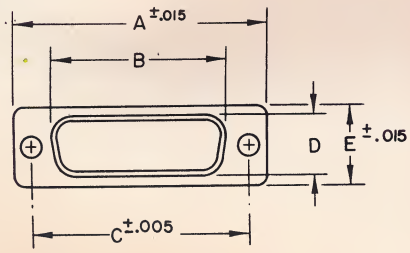
	E	A	B
FACE VIEW PIN INSERT			
SHELL SIZE	E	A	B
NO. OF CONTACTS	9	15	25
CONTACT SIZE	#20	#20	#20

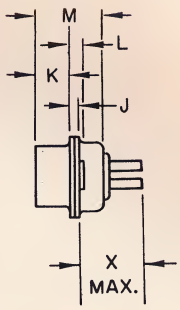


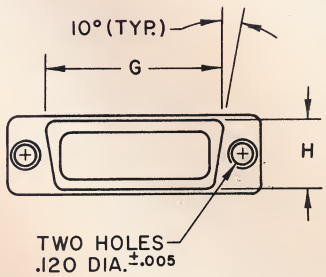


	C	D
FACE VIEW PIN INSERT		
SHELL SIZE	C	D
NO. OF CONTACTS	37	50
CONTACT SIZE	#20	#20

STANDARD SHELL



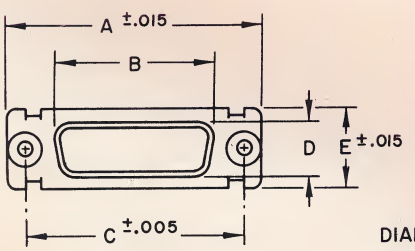


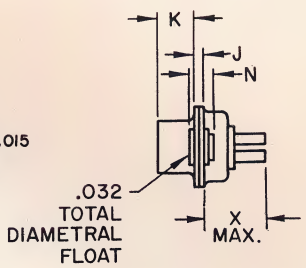


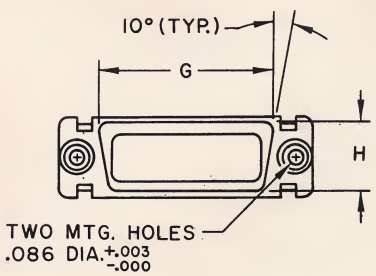
Part Number by Shell Size	A	B	C	D	E	G	H	J	K	L	M	N	X
DESM-9P	1.213	.697	.984	.360	.494	.759	.422	.030	.236	.045	.422	.120	.422
DESM-9S	1.213	.640	.984	.308	.494	.759	.422	.030	.243	.045	.429	.120	.390
DASM-15P	1.541	1.025	1.312	.360	.494	1.083	.422	.030	.236	.045	.422	.120	.422
DASM-15S	1.541	.968	1.312	.308	.494	1.083	.422	.030	.243	.045	.429	.120	.390
DBSM-25P	2.088	1.583	1.852	.378	.494	1.625	.422	.039	.231	.060	.426	.129	.422
DBSM-25S	2.088	1.508	1.852	.308	.494	1.625	.422	.030	.243	.045	.429	.120	.390
DCSM-37P	2.729	2.231	2.500	.378	.494	2.272	.422	.039	.231	.060	.426	.129	.422
DCSM-37S	2.729	2.156	2.500	.308	.494	2.272	.422	.030	.243	.045	.429	.120	.390
DDSM-50P	2.635	2.127	2.406	.484	.605	2.178	.534	.039	.231	.060	.426	.129	.422
DDSM-50S	2.635	2.062	2.406	.420	.605	2.178	.534	.030	.243	.045	.429	.120	.390

All tolerances are ± .010 unless noted otherwise.
Dimensions B and D are measured as outside dimensions at the bottom of the draw.

SHELL WITH FLOAT MOUNTS*







*Add F to part Nos. in the above table for Float Mounts. (Ex. DESMF-9P).

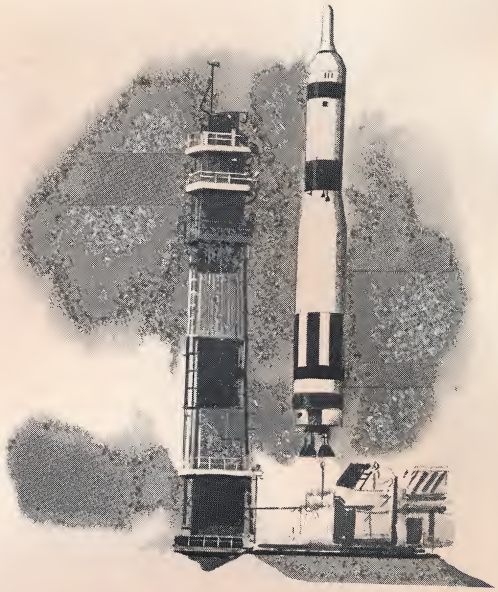
GENERAL INFORMATION

The Cinch Original D Plug utilizes a two-piece nylon insulator housed in a variety of five basic shell sizes: E, A, B, C, and D. These shell sizes contain 9, 15, 25, 37, and 50 #20 solder pot contacts respectively. Standard contact terminations accommodate up to #20 AWG stranded wire. Current rating is 5 amperes*.

The keystone shape of the shell assures proper polarization. Coupling is by means of friction; locking accessories are available. Also available are shells with float mounts.

With standard nylon insulators, operating temperatures range from −65°F to +250°F (the limiting factor being the insulator material). When a (C7) or (C33) diallyl phthalate insulator is substituted, the operating temperature range is from −65°F to +275°F.

**Military rating of #20 contacts or wires is 1.5 amps average, and 7.5 amps maximum. See explanation on page 20.*



MATERIALS AND FINISHES

SHELLS:	Steel, cadmium plated with yellow chromate supplementary coating.
PIN CONTACTS:	Brass, gold plated (.00003) over silver plate (.0002).
SOCKET CONTACTS:	Phosphor bronze, gold plated (.00003) over silver plate (.0002).
INSULATORS:	Nylon, two-piece
FLOAT MOUNTING RIVETS & WASHERS	Stainless steel

For listing of applicable specifications see page 20.

PERFORMANCE DATA

VOLTAGE RATING:	See tabulation on page 20.
INSULATION RESISTANCE:	Greater than 5,000 megohms, determined in accordance with MIL-STD-202A, Method 302.
CONTACT VOLTAGE DROP:	2.67 Millivolts, maximum, per ampere.
INDIVIDUAL CONTACT SEPARATION FORCE:	1 to 8 ounces.
MOISTURE RESISTANCE:	Exceeds test requirements of MIL-STD-202A, Method 106.†
VIBRATION:	Exceeds test requirements of MIL-STD-202A, Method 204, Condition B.†
SHOCK:	Exceeds test requirements of MIL-STD-202A, Method 202A.†
CORROSION RESISTANCE:	Exceeds requirements of 50 hour exposure to salt spray in accordance with MIL-STD-202A, Method 101A, Condition B.†

†As referenced in MIL-C-8384B.

ORDERING NOMENCLATURE

D A —15 P (C33)
D A F —15 S —2

- —2 — Modification Codes
- S — Contact Type
- —15 — Insert Arrangement
- F — Float mount
- A — Shell Size
- D — Prefix

NOMENCLATURE EXPLANATION

PREFIX	Series identification.
SHELL SIZE	Five basic shell sizes: E, A, B, C, D.
FLOAT MOUNT	Stainless steel washers and rivets.
INSERT ARRANGEMENTS	See below.
CONTACT TYPE	P for pin; S for socket.

MODIFICATIONS

CONTACT TERMINATIONS*	(F32)	Tapered terminals (available in Nylon inserts only) for use with AMP #37 tapered sockets.
SHELL INSULATOR*	(F115)	With #4-40 clinch nuts rear mounted in flange rivet holes.
	(C7)	Diallyl phthalate, asbestos filler, per MIL-M-14F, Type MDG.
	(C33)	Diallyl phthalate, glass fiber filled, per MIL-M-19833, Type GDI-30.
	(F114)	Nylon front insulator combined with (C7) rear insulator.
CONTACT FINISH*	(A106)	Heavy hard gold plate (.0001) over copper flash.
	(A115)	Heavy hard gold plate (.0001) over silver plate (.0002)
	(A125)	Heavy soft gold plate (.0001) over copper flash.
NON-MAGNETIC PLUG	—NM	Non-Magnetic version includes soft rolled brass shell and Nylon insulator. Brass rivets and washers are used for float mounting.
PRINTED CIRCUIT TERMINALS		Terminals .040 diameter by .093 nominal beyond barriers for use on boards of .062 nominal thickness. For greater board thicknesses consult factory.

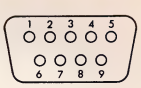
	ORDERING CODE NUMBER	
SHELL SIZE	FOR PIN	FOR SOCKET
(Nylon insulators)		
DE-9	—1	—1
DA-15	—6	—2
DB-25	—3	—3
DC-37	—4	—4
DD-50	—6	—6
(C7 insulators) All Shell Sizes	—1 C7	—1 C7

*Consult factory for other modifications.

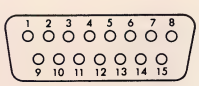
INSERT ARRANGEMENTS

actual size

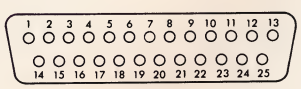
FACE VIEW PIN INSERT



SHELL SIZE: E
NO. OF CONTACTS: 9
CONTACT SIZE: #20

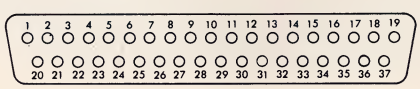


SHELL SIZE: A
NO. OF CONTACTS: 15
CONTACT SIZE: #20

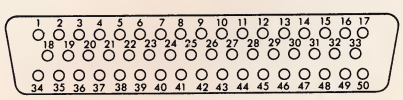


SHELL SIZE: B
NO. OF CONTACTS: 25
CONTACT SIZE: #20

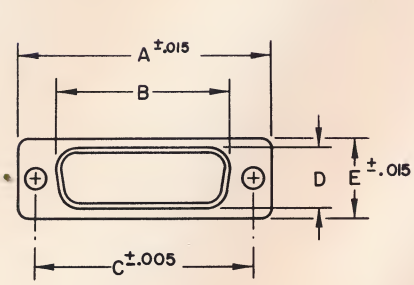
FACE VIEW PIN INSERT

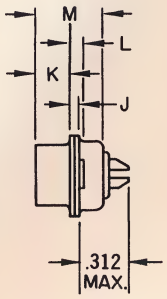


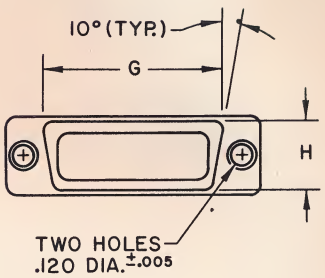
SHELL SIZE: C
NO. OF CONTACTS: 37
CONTACT SIZE: #20



SHELL SIZE: D
NO. OF CONTACTS: 50
CONTACT SIZE: #20





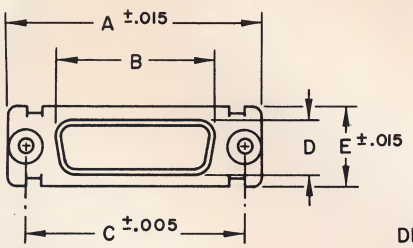


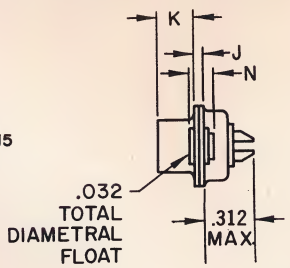
STANDARD SHELL

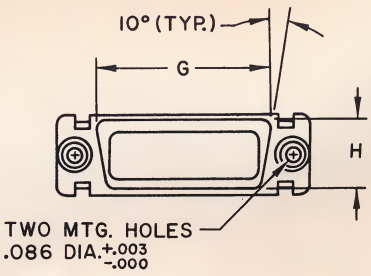
Part Number by Shell Size	A	B	C	D	E	G	H	J	K	L	M	N
DE-9P	1.213	.697	.984	.360	.494	.759	.422	.030	.236	.045	.422	.120
DE-9S	1.213	.640	.984	.308	.494	.759	.422	.030	.243	.045	.429	.120
DA-15P	1.541	1.025	1.312	.360	.494	1.083	.422	.030	.236	.045	.422	.120
DA-15S	1.541	.968	1.312	.308	.494	1.083	.422	.030	.243	.045	.429	.120
DB-25P	2.088	1.583	1.852	.378	.494	1.625	.422	.039	.231	.060	.426	.129
DB-25S	2.088	1.508	1.852	.308	.494	1.625	.422	.030	.243	.045	.429	.120
DC-37P	2.729	2.231	2.500	.378	.494	2.272	.422	.039	.231	.060	.426	.129
DC-37S	2.729	2.156	2.500	.308	.494	2.272	.422	.030	.243	.045	.429	.120
DD-50P	2.635	2.127	2.406	.484	.605	2.178	.534	.039	.231	.060	.426	.129
DD-50S	2.635	2.062	2.406	.420	.605	2.178	.534	.030	.243	.045	.429	.120

All tolerances are ± .010 unless noted otherwise.
Dimensions B and D are measured as outside dimensions at the bottom of the draw.

SHELL WITH FLOAT MOUNTS*







*Add F to part Nos. in the above table for Float Mounts. (Ex. DEF-9P).

HERMETIC D D*H

GENERAL INFORMATION

Cinch D*H Hermetically Sealed Plugs have been developed to meet the environmental conditions of extreme pressure differential. These plugs withstand the pressure differential and prevent leakage through the plug and subsequent accumulation of moisture, causing corrosion behind a plug. Five basic shell sizes are available with the number of contacts ranging from nine to fifty. See page 16 for specific sizes and insert arrangements. As in all other D Subminiature Series, polarization is afforded by the keystone shape of the shell. Locking devices are available for all shell sizes. #20 pin contacts are standard. Current rating is five amperes.* Contact terminations are either solder pot or eyelet, accommodating up to #20 AWG stranded wire. Operating temperatures range from −65°F to +300°F.

**Military rating of #20 contacts or wires is 1.5 amps average, and 7.5 amps maximum. See explanation on page 20.*

MATERIALS AND FINISHES

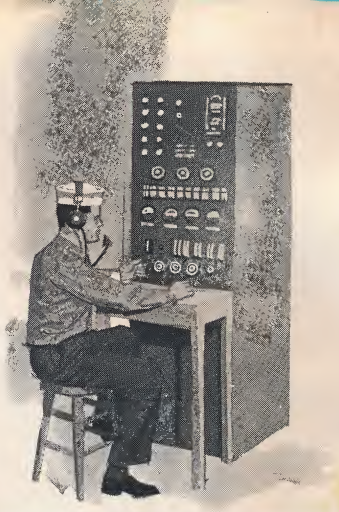
SHELL:	Low carbon steel, plated with electro-deposited tin (.00007) over cadmium (.0002), over copper flash.
CONTACTS:	Steel, plated with electro-deposited tin (.00007) over cadmium (.0002), over copper flash.
INSULATION:	Compression glass
PLATE:	Steel

For listing of applicable specifications see page 20.

PERFORMANCE DATA

VOLTAGE RATING	See tabulation on page 20.
INSULATION RESISTANCE:	5,000 megohms minimum when tested per MIL-STD-202A, Method 302.
CONTACT VOLTAGE DROP:	6.67 millivolts per ampere maximum when mated with any Original D or Golden D receptacle.
AIR LEAKAGE RATE:	1 micron cubic foot/hour maximum (1.04×10^{-5} cc/sec.) at 1 ATM pressure differential.
VIBRATION RESISTANCE:	Exceeds test requirements of MIL-STD-202A, Method 204, Condition B.†
CORROSION RESISTANCE:	Exceeds requirements of 50 hour salt spray exposure, tested in accordance with MIL-STD-202A, Method 101A.†
SHOCK:	Exceeds tests for MIL-STD-202A, Method 202A.†

†As referenced in MIL-C-8384B.



ORDERING NOMENCLATURE

D E H 9 P 00 1

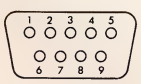
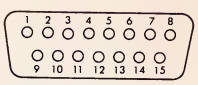
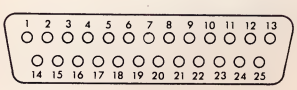
- Contact termination
- Flange type
- Contact type
- Insert arrangement
- Class
- Shell size
- Prefix

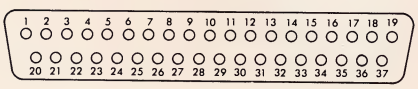
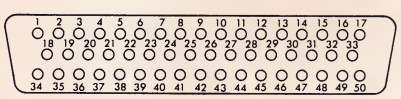
NOMENCLATURE EXPLANATION

PREFIX	Series identification
SHELL SIZE	Five basic shell sizes: E, A, B, C and D
CLASS	H: Hermetic
INSERT ARRANGEMENTS	See diagrams below.
CONTACT TYPE	P: Pin contacts only
FLANGE TYPE	00 Solid flange; no mounting holes 10 Two .120 diameter mounting holes 20 Two lock posts accepting #4 screw
CONTACT TERMINATION	1 Eyelet contact termination 2 Solder pot termination
MODIFICATIONS	Consult factory for finish variations on high temperature applications up to 600°F, or special low leakage types.
SHELL FINISH	(A94) Fused electro tin (.0001) (A102) Electro tin (.0003)
CONTACT FINISH	(A94) Fused electro tin (.0001) (A95) Hard gold flash (.00003) over silver plate (.0002) (A102) Electro tin (.0003)

INSERT ARRANGEMENTS

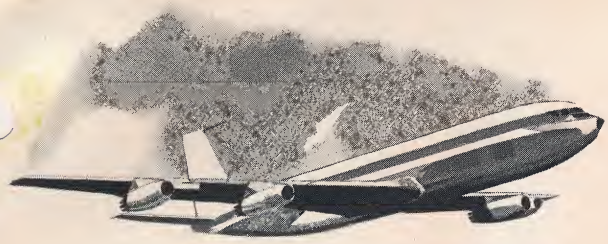
actual size

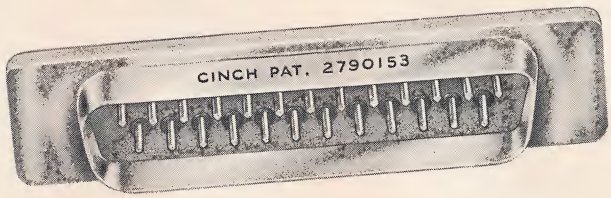
	E	A	B
FACE VIEW PIN INSERT			
SHELL SIZE	E	A	B
NO. OF CONTACTS	9	15	25
CONTACT SIZE	#20	#20	#20

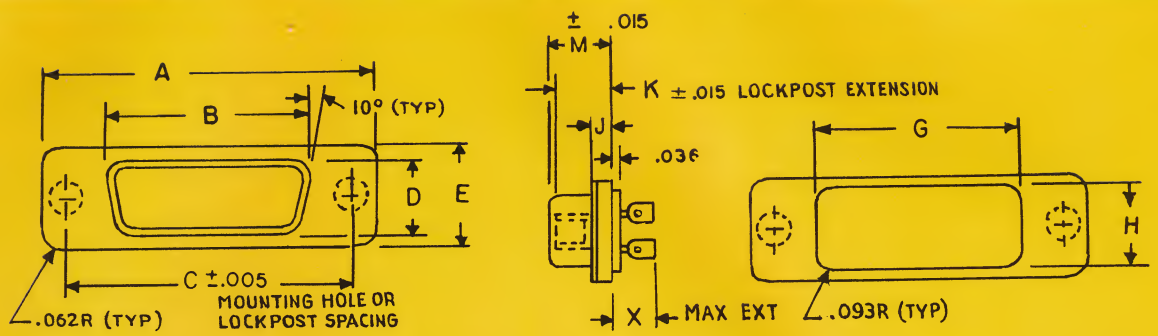
	C	D
FACE VIEW PIN INSERT		
SHELL SIZE	C	D
NO. OF CONTACTS	37	50
CONTACT SIZE	#20	#20

HERMETIC D

D*H







Part No. by Shell Size	A	B	C	D	E	G	H	J	K	M	X Solder Pot	X Eye-let	P	S
DEH9P ***	1.208	.697	.984	.360	.499	.721	.365	.094	.331	.334	.285	.205	.735	.379
DAH15P ***	1.545	1.025	1.312	.360	.499	.928	.365	.094	.331	.334	.285	.205	.942	.379
DBH25P ***	2.093	1.583	1.852	.378	.499	1.475	.365	.103	.331	.339	.285	.205	1.489	.379
DCH37P ***	2.733	2.231	2.500	.378	.499	2.121	.365	.103	.331	.339	.285	.205	2.135	.379
DDH50P ***	2.639	2.127	2.406	.484	.609	1.996	.496	.103	.331	.339	.285	.205	2.010	.510

*** Add dash number for flange and contact types desired as indicated on tabulation below:

Flange and contact dash number.

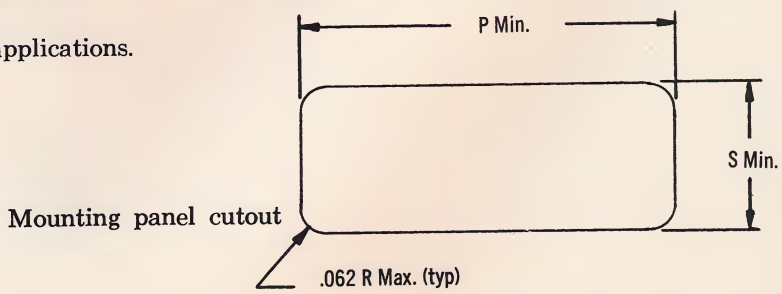
001 Solid flange; no mounting facilities; eyelet termination.
002 Solid flange; no mounting facilities; solderpot termination.
101 Two .120 diameter ± .005 mounting holes; eyelet termination.
102 Two .120 diameter ± .005 mounting holes; solderpot termination.
201 Two lockposts; 4-40 NC-28 thread; eyelet termination.
202 Two lockposts; 4-40 NC-28 thread; solderpot termination.
All tolerances are ±.010 unless noted otherwise.

Notes:

(1) Dimensions B and D are measured as outside dimensions at the bottom of the draw.

(2) Hermetic sealing is effective when connectors are mounted at the front of the panel.

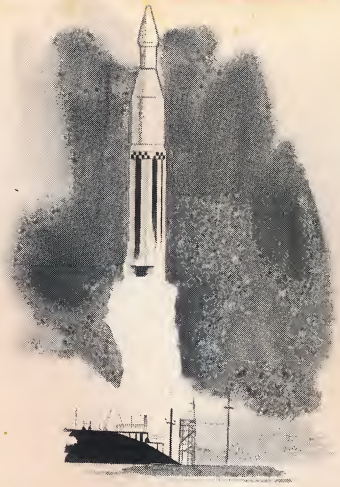
(3) Consult factory for rear mounting applications.



ACCESSORIES

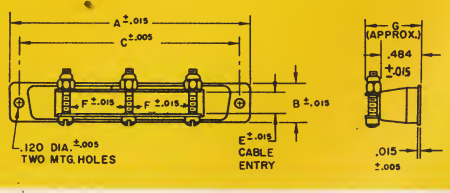
ACCESSORY CHART

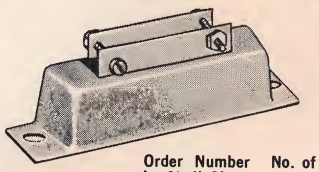
ACCESSORIES	APPLICATION				
	D*	D*M	D*M COMBI-NATION	D*SM	D*H
Junction Shells–19678 Straight Clamp	•	•			
Junction Shells–Round Clamp	•	•		•	
Junction Shells—Deep, Straight Clamp	•	•	•	•	
Junction Shells–Right Angle	•	•		•	
Potting Shells–with or without Grips	•	•			
Dust Caps—Polyethylene	•	•	•	•	•
Screw Lock Assemblies–Male & Female	•	•	•	•	



JUNCTION SHELLS

19678 STRAIGHT CLAMP

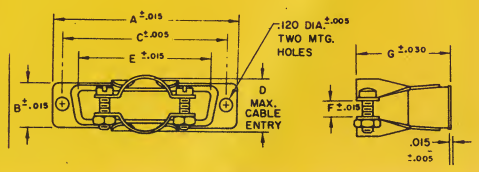


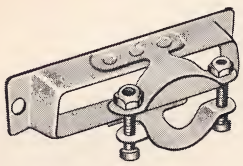


MATERIAL: Low carbon steel
FINISH: Cadmium plate, yellow chromate
CORROSION RESISTANCE: Passes 50 hour exposure to salt spray in accordance with MIL-STD-202A, Method 101A, Condition B.

Order Number by Shell Size	No. of Cable Locking Screws Required	A	B	C	E	F	G
DA-19678-1	2	1.531	.500	1.312	.296	.312	.640
DB-19678-2	2	2.078	.500	1.852	.296	.796	.640
DC-19678-3	3	2.718	.500	2.500	.296	.687	.640
DD-19678-4	3	2.625	.609	2.406	.390	.687	.703

ROUND CLAMP



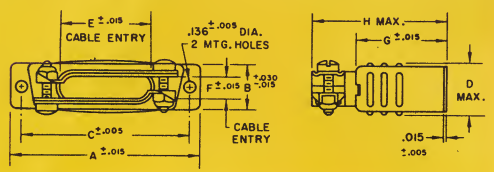


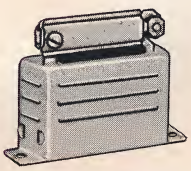
MATERIAL: Low carbon steel
FINISH: Cadmium plate, yellow chromate
CORROSION RESISTANCE: Passes 50 hour exposure to salt spray in accordance with MIL-STD-202A, Method 101A, Condition B.

All tolerances are ± .010 unless noted otherwise.

Order Number by Shell Size	A	B	C	D	E	F	G
DA-20961	1.531	.500	1.312	.406	.984	.125	1.031
DB-20962	2.078	.500	1.852	.593	1.515	.187	1.062
DC-20963	2.718	.500	2.500	.718	2.171	.250	1.062
DD-20964	2.625	.609	2.406	.812	2.093	.312	1.062

DEEP, STRAIGHT CLAMP

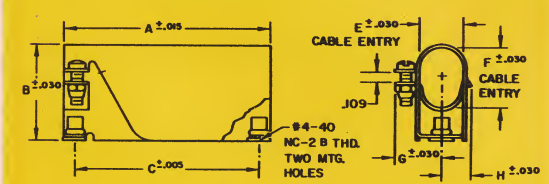


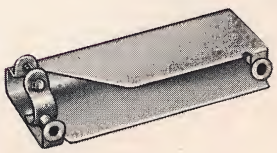


MATERIAL: Low carbon steel
FINISH: Cadmium plate, yellow chromate
CORROSION RESISTANCE: Passes 50 hour exposure to salt spray in accordance with MIL-STD-202A, Method 101A, Condition B.

Order Number by Shell Size	A	B	C	D	E	F	G	H
DE-24657	1.203	.484	.984	.578	.375	.375	.750	1.219
DA-24658	1.531	.484	1.312	.578	.713	.312	.750	1.250
DB-24659	2.078	.484	1.852	.578	1.000	.312	1.000	1.531
DC-24660	2.718	.484	2.500	.578	1.375	.312	1.000	1.531
DD-24661	2.625	.593	2.406	.687	1.406	.406	1.125	1.656

19977 RIGHT ANGLE





MATERIAL: Low carbon steel
FINISH: Cadmium plate, yellow chromate
CORROSION RESISTANCE: Passes 50 hour exposure to salt spray in accordance with MIL-STD-202A, Method 101A, Condition B

Order Number by Shell Size	A	B	C	E	F	G	H
DE-19977-5	1.203	.718	.984	.437	.437	.468	.281
DA-19977-1	1.531	.718	1.312	.437	.437	.468	.281
DB-19977-2	2.078	.968	1.852	.437	.625	.468	.281
DC-19977-3	2.718	1.187	2.500	.437	.812	.468	.281
DD-19977-4	2.625	1.250	2.406	.562	.906	.531	.343

All-Molded type junction shell hoods also available. Consult factory for further information.

POTTING SHELLS

MATERIAL: Low carbon steel
FINISH: Cadmium plate, yellow chromate
CORROSION RESISTANCE: Passes 50 hour exposure to salt spray in accordance with MIL-STD-202A, Method 101A, Condition B.

Order Number by Shell Size	A	B	C	D	E
DA-19678-10	1.531	.500	1.312	.300	.588
DB-19678-11	2.078	.500	1.852	.300	1.125
DC-19678-12	2.718	.500	2.500	.300	1.750
DD-19678-13	2.625	.609	2.406	.390	1.750

MATERIAL: Low carbon steel
FINISH: Cadmium plate, yellow chromate
CORROSION RESISTANCE: Passes 50 hour exposure to salt spray in accordance with MIL-STD-202A, Method 101A, Condition B.

Order Number by Shell Size	A	B	C	D	E
DA-19678-14	1.531	.500	1.312	.300	.588
DB-19678-15	2.078	.500	1.852	.300	1.125
DC-19678-16	2.718	.500	2.500	.300	1.750
DD-19678-17	2.625	.609	2.406	.390	1.750

DUST CAPS

Order Number by Shell Size	For Use with	A	B	C	D
DE-59-20	DE-9S	.694	.627	.362	.295
DE-60-20	DE-9P	.749	.682	.412	.345
DA-59-20	DA-15S	1.022	.955	.362	.295
DA-60-20	DA-15P	1.077	1.010	.412	.345
DB-59-20	DB-25S	1.562	1.495	.362	.295
DB-60-20	DB-25P	1.635	1.568	.430	.363
DC-59-20	DC-37S	2.210	2.143	.362	.295
DC-60-20	DC-37P	2.283	2.216	.430	.363
DD-59-20	DD-50S	2.116	2.049	.474	.407
DD-60-20	DD-50P	2.179	2.112	.536	.469

MATERIAL: Polyethylene (red)
FINISH: None

All tolerances are ± .010 unless noted otherwise.

SCREW LOCK ASSEMBLIES

MALE

MATERIAL: Clip: sheet steel. Hardware: cold rolled steel.
FINISH: Cadmium plate, yellow chromate
CORROSION RESISTANCE: Passes 50 hour exposure to salt spray in accordance with MIL-STD-202A, Method 101A, Condition B.

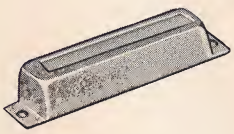
FEMALE

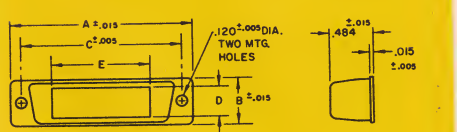
MATERIAL: Cold rolled steel.
FINISH: Cadmium plate, yellow chromate
CORROSION RESISTANCE: Passes 50 hour exposure to salt spray in accordance with MIL-STD-202A, Method 101A, Condition B.

Order Number	Type	Shell Size	For use with plug	For use with plug and junction shell
D20418-2	Female	DE, DA, DB, DC, DD	Yes	Yes
D20419	Male	DE, DA, DB, DC	Yes	No
D20419-16	Male	DE, DA, DB, DC	No	Yes
D20420	Male	DD	Yes	No
D20420-12	Male	DD	No	Yes

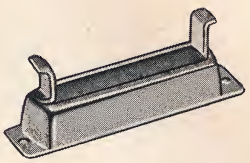
NOTES: (1) An 8 inch/pound (female) and 4 inch/pound (male) maximum torque during assembly is recommended on screw lock assemblies.
(2) For non-magnetic versions consult factory.

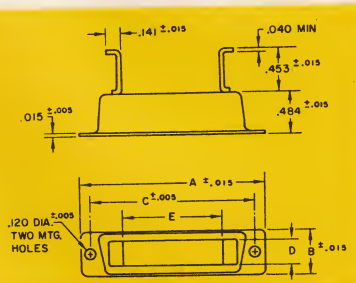
19678 LESS GRIPS

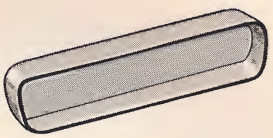


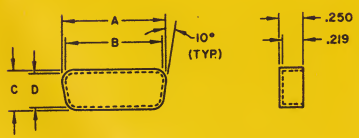


19678 WITH GRIPS

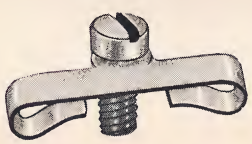




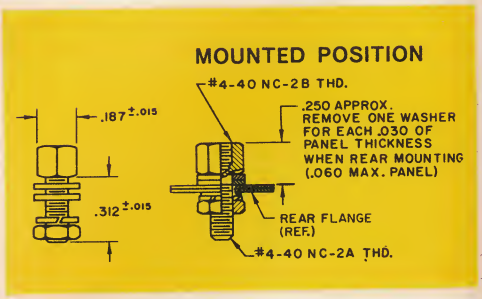




MALE



FEMALE



VOLTAGE RATINGS

All voltage Figures are AC (rms), 60 cps, measured at approximately 77°F., 50% RH.

STANDARD LAYOUT CONNECTORS

Measured from contact-to-contact, and contact-to-shell in unmated condition.

CONNECTOR TYPE		ALTITUDE (FEET) SEA LEVEL	20,000	50,000	70,000
D* D*M D*SM	Average Flashover	1700	1,000	650	500
	Test	1250	750	475	375
D*H	Average Flashover	1000	825	300	250
	Test	750	625	225	175

COAXIAL AND HV COMBINATION CONNECTORS

All voltages are for plugs and receptacles in both mated and unmated conditions.

ALTITUDE (FEET)		SEA LEVEL		20,000		50,000		70,000	
Type of Contact		90°	Straight	90°	Straight	90°	Straight	90°	Straight
Center Conductor to Coaxial Shell	Average Flashover	1200	1500	900	1000	600	700	400	500
	Test	800	1000	600	650	400	475	275	325
Coaxial Shell to Connector Shell	Average Flashover	1500	1500	1000	1000	500	500	500	500
	Test	1000	1000	650	650	325	325	325	325
Coaxial Shell to Nearest Standard Solder Pot Contact	Average Flashover	*	1500	*	1500	*	900	*	650
	Test	*	1000	*	1000	*	600	*	425
HV Contact to Nearest #20 Contact or to Shell	Average Flashover	3800	3800	2300	2300	900	900	650	650
	Test	2800	2800	1700	1700	675	675	475	475

Not applicable due to variable rotation.

CURRENT RATINGS

Cinch vs. Military

The Cinch rating for #20 contacts is 5 amps, which means 5 amps for all contacts simultaneously. MIL-W-5088 rates #20 contacts at 7.5 amps maximum. The explanation is as follows:

MIL-W-5088B, Paragraph 3-5-2-1-2 specifies:

"Table I current ratings for cables in bundles are based upon 15 or more cables carrying no more than 20% of the total carrying capacity of the bundle."

Table I specifies a current rating of 7.5 amps maximum for single wires in bundles of 15 or more wires. NOTE: Wires and contacts are both considered to be in the category of conductors.

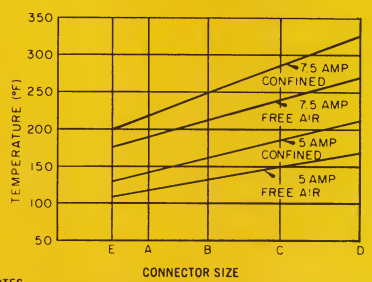
Explanation

If 15 wires (normally rated at 7.5 amps per wire maximum, or at a total bundle current of 112.5 amps) are not to carry more than 20% of the total 112.5 amps, the *average* current rating per wire is 20% of 112.5 amps (total bundle capacity) divided by 15 (number of wires).

Conclusion

The Military rating of #20 contacts or wires is 1.5 amps average (based on 15 wires per bundle or 15 contacts per connector) vs. a Cinch rating of 5 amps.

AVERAGE MAXIMUM TEMPERATURE VS. CONNECTOR SIZE
for various current ratings of mated pairs of D Subminiature Connectors



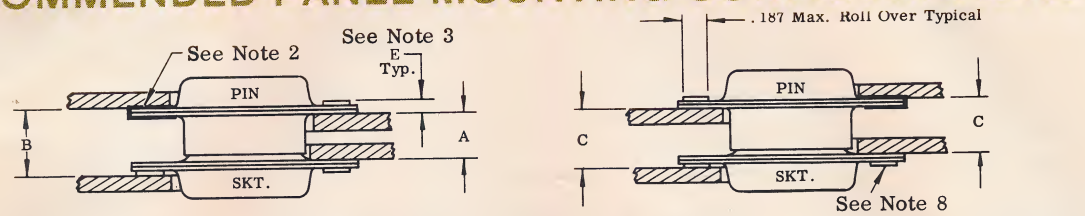
NOTES:
1. Free air condition. Connectors not shielded from ambient condition in any manner.
2. Confined condition. Connectors placed in insulated box (1 x 2 x 3.5) during test, with no moving air.
3. Average maximum temperature stabilization: 1 hour or less in all cases.
4. All contacts in each mated pair tested were wired in series with specified current flowing.

MATERIAL AND PLATING SPECIFICATIONS

MATERIAL	APPLICATION	PER SPECIFICATION
Beryllium Copper	Coax Recept. Outer Body	QQ-C-530
Brass	Contact	QQ-B-626a, Composition 22, HH
Brass	Shell	QQ-B-613a, Composition 11, HH
Diallyl phthalate, glass fibre filled, (short)	Insulator	MIL-M-14F, Type SDG
Diallyl phthalate, glass fibre filled, (long)	Insulator	MIL-M-19833, Type GD1-30
Diallyl phthalate, asbestos filled	Insulator	MIL-M-14F, Type MDG
Leaded copper	Contact	Anaconda Alloy #126 or equivalent
Nylon	Insulator	MIL-P-17091B
Phosphor bronze	Contact	ASTM B139, Alloy B2
Stainless steel	Float rivet	No. 303, per QQ-S-763b
Stainless steel	Float washer	No. 304, per QQ-S-766c
Steel	Contact	QQ-S-633a
Steel	Shell	QQ-S-636
Teflon	Coaxial insulator	MIL-P-19468A

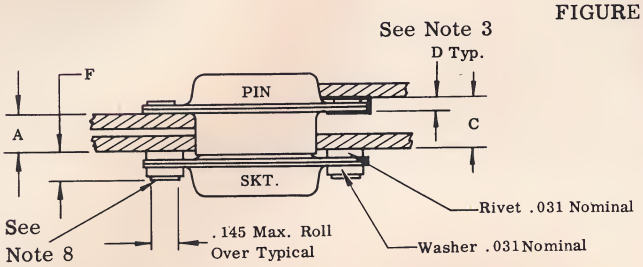
PLATING	APPLICATION	PER SPECIFICATION
Cadmium plate	Shell	QQ-P-416a, Type II, Class 2
Copper	Contact	MIL-C-14550
Gold plate	Contact	MIL-G-45204
Silver plate	Contact	QQ-S-365a
Tin plate	Shell and contact	MIL-T-10727A

RECOMMENDED PANEL MOUNTING CONFIGURATIONS



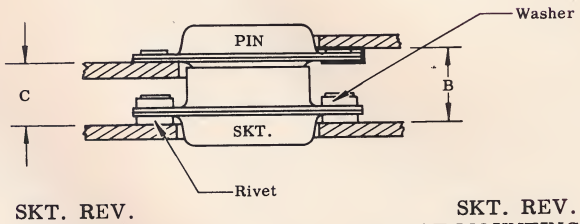
FRONT MOUNTING REAR MOUNTING PIN REAR MOUNTING PIN FRONT MOUNTING
SKT. FRONT MOUNTING SKT. REAR MOUNTING

FIGURE 1



SKT. FLOAT MOUNTING PIN REAR MOUNTING SKT. FLOAT MOUNTING PIN FRONT MOUNTING

FIGURE 2



SKT. REV. FLOAT MOUNTING PIN REAR MOUNTING SKT. REV. FLOAT MOUNTING PIN FRONT MOUNTING

FIGURE 3

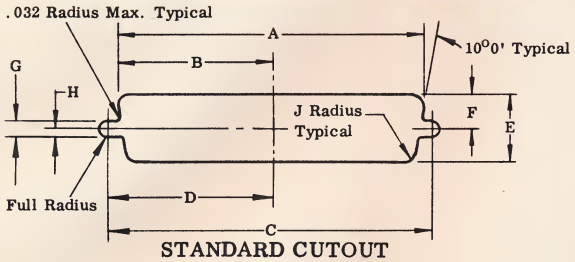
NOTES

1. A, B, and C minimum dimensions between panels represent a recommended limit to be approached in the design of the plug mounting means. The construction of this plug series permits normal operation when disengaged .030 above the minimum, indicated under any combination of mounting conditions.
2. Solid heavy lines indicate hermetic flange.
3. "D" dimensions apply to hermetic plugs only. "E" dimensions apply to non-hermetic plugs, only.
4. On plugs with float hardware dimensions, apply as shown whether hardware is on socket (as illustrated) or pin side. Standard float mount plugs have sockets.
5. It is recommended that only one assembly, either pin or socket, be float mounted.
6. Float mount assemblies consist of .030 thick washers. Earlier versions (previous to September 1, 1961) contained .025 thick washers.
7. Standard pin assemblies contain .015 thick front shells on E and A sizes ; .024 thick front shells on B, C & D sizes.
8. Standard plugs accommodate a number 4 screw. Float mounted plugs accommodate a number 2 screw.

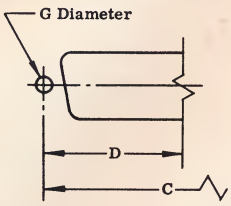
RECOMMENDED PANEL MOUNTING DIMENSIONS

See Fig. No.	COMBINATION OF MATED PLUGS DESCRIPTION PIN	SOCKET	DIMENSION A See Note 1 Min.	B See Note 1 Min.	C See Note 1 Min.	D ±.010	E PIN ±.010	E SKT. ±.010	F ±.010
1	.015 Front Shell	Std.	.250	.343	.298	-	.045	.045	-
1	.015 Front Shell Hermetic	Std.	.250	.391	.345	.094	-	.045	-
1	.024 Front Shell	Std.	.238	.345	.298	-	.060	.045	-
1	.024 Front Shell Hermetic	Std.	.238	.388	.342	.103	-	.045	-
2	.015 Front Shell	Float Mount	.221	-	.269	-	.045	-	.120
2	.015 Front Shell Hermetic	Float Mount	-	-	.316	.094	-	-	.120
2	.024 Front Shell	Float Mount	.209	-	.269	-	.060	-	.120
2	.024 Front Shell Hermetic	Float Mount	-	-	.313	.103	-	-	.120
2	.015 Front Shell Float Mount	Std.	.221	-	.268	-	-	.045	.120
2	.024 Front Shell Float Mount	Std.	.209	-	.256	-	-	.045	.130
3	.015 Front Shell	Rev. Float Mt.	-	.360	.314	-	.045	-	.120
3	.015 Front Shell Hermetic	Rev. Float Mt.	-	.408	-	.094	-	-	.120
3	.024 Front Shell	Rev. Float Mt.	-	.362	.302	-	.060	-	.120
3	.024 Front Shell Hermetic	Rev. Float Mt.	-	.405	-	.103	-	-	.120
3	.015 Front Shell Rev. Flt. Mt.	Std.	-	.360	.314	-	-	.045	.120
3	.024 Front Shell Rev. Flt. Mt.	Std.	-	.357	.302	-	-	.045	.130

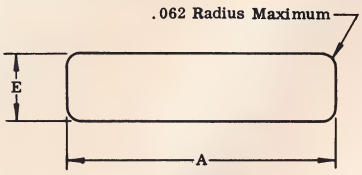
RECOMMENDED PANEL CUTOUT CONFIGURATIONS



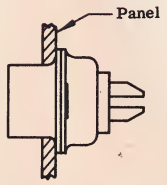
STANDARD CUTOUT



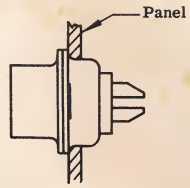
OPTIONAL CUTOUT FOR REAR MOUNTING



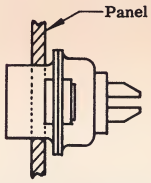
D*H CUTOUT CONFIGURATION



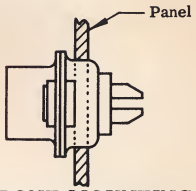
REAR MOUNTING STANDARD



FRONT MOUNTING STANDARD



REAR MOUNTING FLOAT



FRONT MOUNTING FLOAT

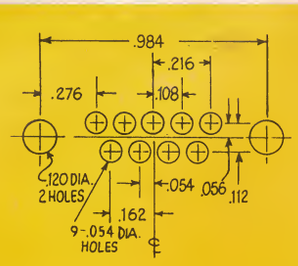
RECOMMENDED PANEL CUTOUT DIMENSIONS

CONNECTORS	MOUNTING METHOD	A ± .005	B ±.005	C ±.005	D ±.005	E ±.005	F ±.005	G ±.002	H ±.002	J ±.005
DA, DAM	Front Mtg.	1.202	.601	1.312	.656	.513	.257	.120	.060	.083
DASM	Rear Mtg.	1.134	.567	1.312	.656	.449	.225	.120	.060	.132
DAF, DAMF	Front Mtg.	1.234	.617	1.312	.656	.545	.273	.088	.044	.083
DASMF	Rear Mtg.	1.166	.583	1.312	.656	.481	.241	.088	.044	.132
DB, DBM	Front Mtg.	1.743	.872	1.852	.926	.513	.257	.120	.060	.083
DBSM	Rear Mtg.	1.674	.837	1.852	.926	.449	.225	.120	.060	.132
DBF, DBMF	Front Mtg.	1.775	.888	1.852	.926	.545	.273	.088	.044	.083
DBSMF	Rear Mtg.	1.706	.853	1.852	.926	.481	.241	.088	.044	.132
DC, DCM	Front Mtg.	2.391	1.196	2.500	1.250	.513	.257	.120	.060	.083
DCSM	Rear Mtg.	2.326	1.163	2.500	1.250	.449	.225	.120	.060	.132
DCF, DCMF	Front Mtg.	2.423	1.212	2.500	1.250	.545	.273	.088	.044	.083
DCSMF	Rear Mtg.	2.354	1.177	2.500	1.250	.481	.241	.088	.044	.132
DD, DDM	Front Mtg.	2.297	1.149	2.406	1.203	.623	.312	.120	.060	.083
DDSM	Rear Mtg.	2.218	1.109	2.406	1.203	.555	.278	.120	.060	.132
DDF, DDMF	Front Mtg.	2.329	1.165	2.406	1.203	.655	.328	.088	.044	.083
DDSMF	Rear Mtg.	2.250	1.125	2.406	1.203	.587	.294	.088	.044	.132
DE, DEM	Front Mtg.	.874	.437	.984	.492	.513	.257	.120	.060	.083
DESM	Rear Mtg.	.806	.403	.984	.492	.449	.225	.120	.060	.132
DEF, DEMF	Front Mtg.	.906	.453	.984	.492	.545	.273	.088	.044	.083
DESMF	Rear Mtg.	.838	.419	.984	.492	.481	.241	.088	.044	.132

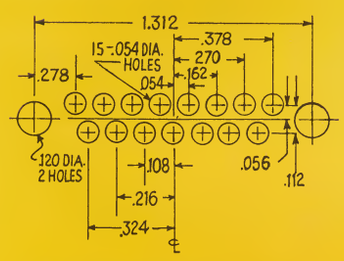
		A Minimum	E Minimum
DAH	Front Mtg.	.942	.379
DBH	Front Mtg.	1.489	.379
DCH	Front Mtg.	2.135	.379
DDH	Front Mtg.	2.010	.510
DEH	Front Mtg.	.735	.379

INSTALLATION INSTRUCTION D*M, D*SM&D*

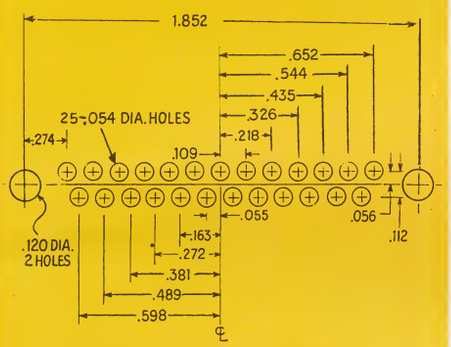
RECOMMENDED PRINTED CIRCUIT BOARD LAYOUTS



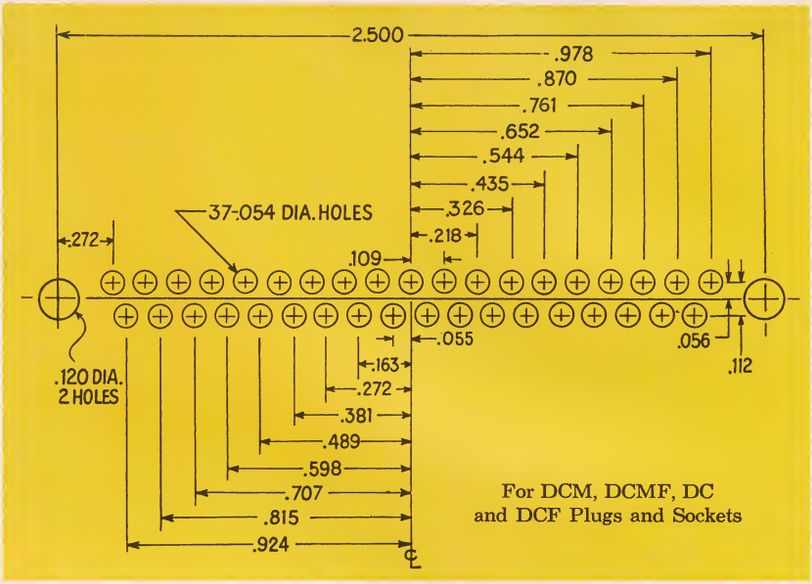
For DEM, DEMF, DE and DEF Plugs and Sockets



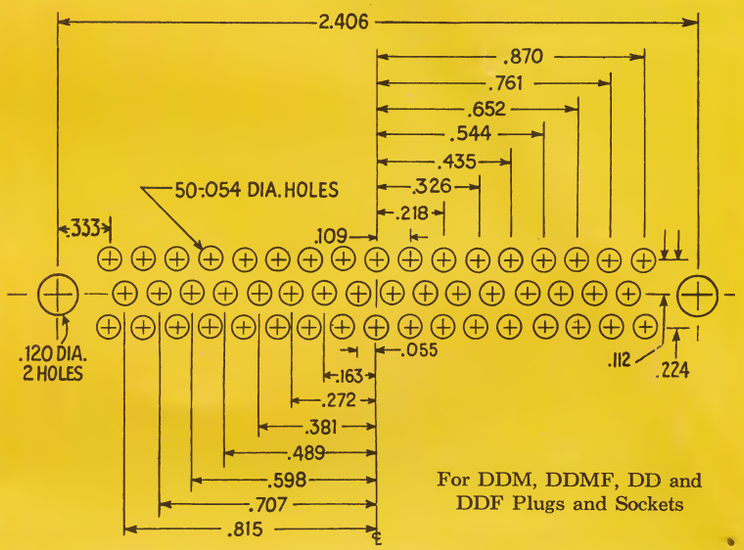
For DAM, DAMF, DA and DAF Plugs and Sockets



For DBM, DBMF, DB and DBF Plugs and Sockets

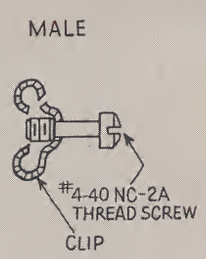


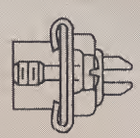
For DCM, DCMF, DC and DCF Plugs and Sockets

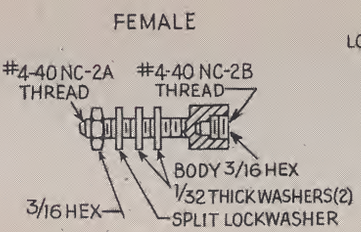


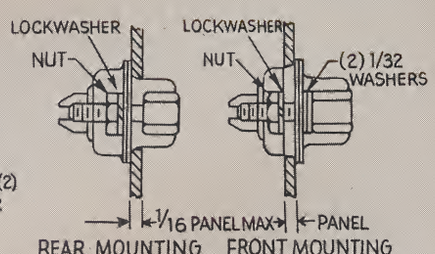
For DDM, DDMF, DD and DDF Plugs and Sockets

SCREW LOCK INSTALLATION INSTRUCTIONS

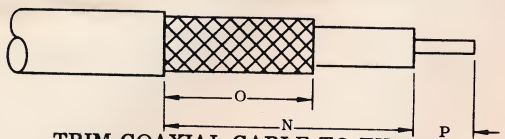






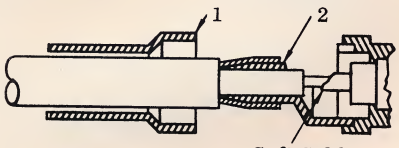


COAXIAL CABLE INSTRUCTIONS

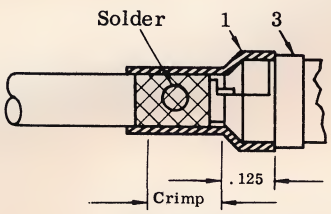


TRIM COAXIAL CABLE TO THESE DIMENSIONS FOR INSTALLATION TO D*M COAXIAL CONTACTS

STRAIGHT COAXIAL

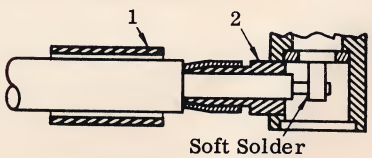


See Step 1

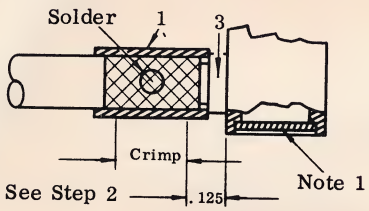


See Step 2

90° COAXIAL



See Step 1



See Step 2

STEPS

1. Slide outer ring (1) over cable jacket. Trim cable. Insert cable dielectric and center conductor into inside diameter of inner sleeve (2) solder center conductor to coaxial center contact.
2. Slide outer ring (1) forward until flush with coaxial shell, (3) confining braid between outer ring and inner sleeve. For solder type coaxials, soft solder outer ring to assembly through cross-drilled solder hole. For crimp type coaxials, crimp with tool indicated being sure to crimp in area defined.

NOTES

1. Soft solder or stake access cap into shell after cable assembly on 90° type coaxials.
2. Tool description.
   A. Thomas & Betts Tool #311 Upper Die (Crimp Twice, Side-by-Side).
   B. Burndy Tool #MR8PV-S Modified per Cannon Drawing CA-58073-1, Jaw 80.
   C. Burndy Tool #MR8PV-S Modified per Cannon Drawing CA-58073-1, Jaw 120.
   D. Cinch Crimp Tool CCT-2016-1.
3. Pin assemblies will accommodate high voltage and coaxial plugs only. Socket assemblies will accommodate high voltage and coaxial receptacles only.

RECOMMENDED AWG WIRE DIMENSIONS

TRIM AWG WIRE TO THIS DIMENSION FOR INSTALLATION TO #20 CONTACTS

NOMENCLATURE	N	Tool No. Note 2
DM-53744	.119	None
-5000	.119	None
DM-53745	.119	None
-5000	.119	None
Crimp Type #20 Contact	.198	D
Solder Type #20 Contact	.119	None

All tolerances ± .010 Inch.

RECOMMENDED COAXIAL CABLE DIMENSIONS

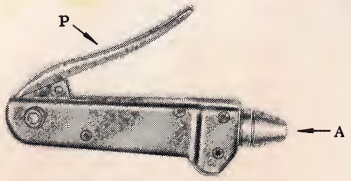
NOMENCLATURE	N	O	P	Tool No. Note 2
DM-53740	5/16	1/4	5/64	A
-1	5/16	1/4	5/64	B
-3	3/8	5/16	5/64	C
-5	3/8	5/16	5/64	C
DM-53741	3/8	15/64	1/16	A
-1	3/8	15/64	1/16	B
-3	27/64	5/16	3/32	C
-4	27/64	5/16	3/32	C
DM-53742	5/16	1/4	5/64	A
-1	5/16	1/4	5/64	B
-3	3/8	5/16	5/64	C
-5	3/8	5/16	5/64	C
DM-53743 -2	3/8	15/64	1/16	A
-3	3/8	15/64	1/16	B
-5	27/64	5/16	3/32	C
-6	27/64	5/16	3/32	C
DM-53740 -5000	5/16	1/4	5/64	None
-5001	5/16	1/4	5/64	None
-5002	3/8	5/16	5/64	None
-5005	3/8	5/16	5/64	None
-5008	5/16	1/4	5/64	None
DM-53741 -5000	3/8	15/64	1/16	None
-5001	3/8	15/64	1/16	None
-5003	27/64	5/16	3/32	None
-5004	27/64	5/16	3/32	None
DM-53742 -5000	5/16	1/4	5/64	None
-5001	5/16	1/4	5/64	None
-5002	3/8	5/16	5/64	None
-5004	3/8	5/16	5/64	None
-5006	5/16	1/4	5/64	None
DM-53743 -5000	3/8	15/64	1/16	None
-5001	3/8	15/64	1/16	None
-5003	27/64	5/16	3/32	None
-5004	27/64	5/16	3/32	None

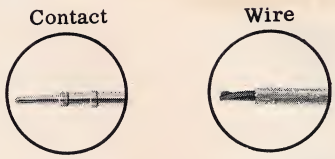
All tolerances ± .010 Inch.

TOOLS

CRIMPING TOOL CCT-2016-1

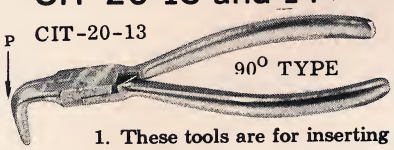
(Supersedes CCT-20-1)

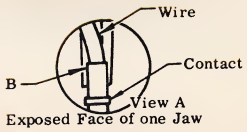




1. This tool is for crimping #20, 22 and 24 AWG wire into pin and socket #20 contacts for the D*SM (MK-II) Series. (Note: Any tool meeting the requirements of Military Drawing MS3191 may be used).
2. Operation Instructions:
   Trim wire as shown on Page 7 and insert into crimp pot of contact. (Inspection hole is provided to insure full insertion of wire). Insert contact and wire into crimp tool (A). Applying force as indicated (P), squeeze tool handle down onto tool body completely and release. If tool handle is not completely depressed contact will not be released. The cycle must be completed.
3. A semi-automatic, air activated tool (CCT-58102) is available for production crimping.

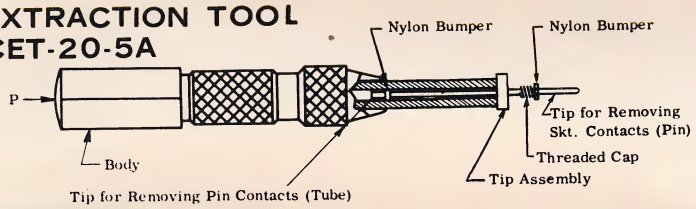
INSERTION TOOLS CIT-20-13 and 14 (Supersedes CIT-20-2)





1. These tools are for inserting #20 pin and socket contacts into the insulator of the D*SM (MK-II) Series after wire has been crimped to contacts using CCT-2016-1 tool.
2. Use reasonable care when inserting the crimped contacts into the insulator cavities, to prevent damage to either the contact or insulator. The recommended procedure is:
   A. Seat the rear of the crimp pot against the shoulder (B) on the inside jaws of the insertion tool (View A). Be sure that the wire is properly centered in the groove to prevent pinching the wire insulation when the jaws are closed.
   B. Insert the contact into the insulator cavity and apply steady force to the tool. It is important that the force applied to the contact be in line with the contact cavity in the insulator (P). This is accomplished on the 90° type by pressing on the nose of the pliers with the thumb of one hand while holding the pliers closed with the other.

EXTRACTION TOOL CET-20-5A



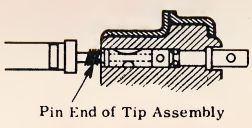


Figure 1

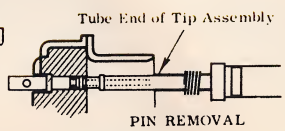
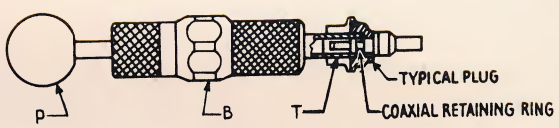


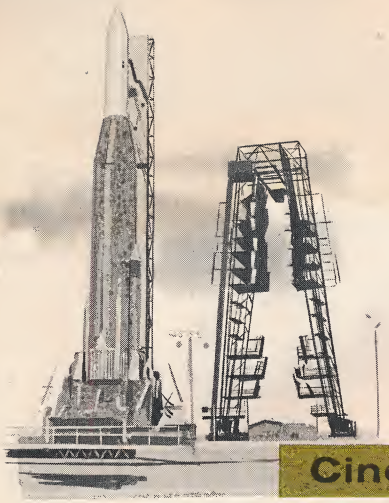
Figure 2

1. This tool is for removal of pin and socket #20 contacts from the D*SM (MK-II) Series. (The CIT-20-13 or CIT-20-14 Tool is required to insert contracts, see instructions above).
2. Operation Instructions:
   To prepare tool for removing contacts, unscrew "Threaded Cap" and remove "Tip Assembly". Replace in reverse order leaving tip desired exposed. Affix tool to contact to be removed as shown in Figures 1 and 2, and push straight forward on body of tool in direction indicated (P). Contact will be pushed out rear of assembly.

EXTRACTION TOOL CET-C6A (Formerly CA-58037 and CET-C6)



1. This tool is for the extraction of coaxial and high voltage contacts (plug or receptacle) from the D*M Series. (No Insertion Tools necessary with this Series).
2. Operation Instructions:
   Holding tool by body (B) insert tip (T) into front of insulator bore over coaxial until it bottoms in insulator bore and closes coaxial retaining ring as shown. Holding body (B) in this position securely (so as to keep coaxial retaining ring closed) push plunger (P). Contact will be pushed out rear of assembly.



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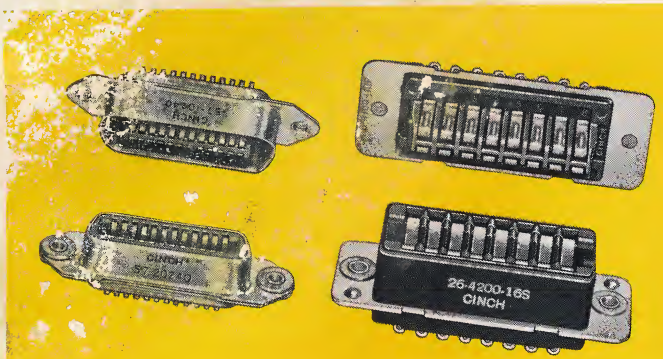

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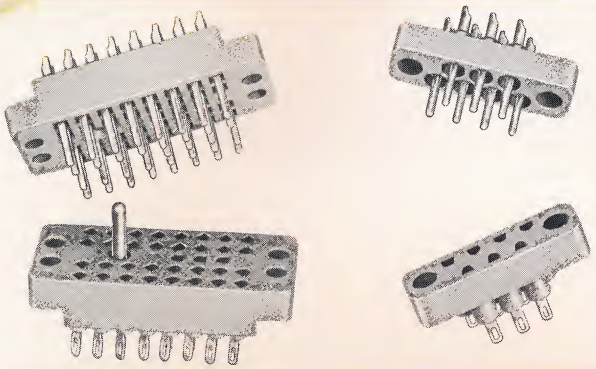
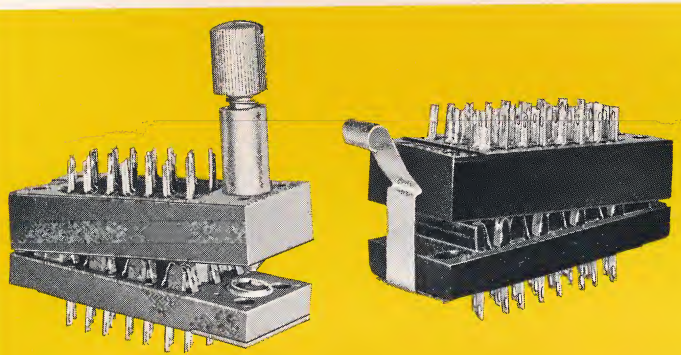
These versatile field-proven connectors have double-sided, flexing action, self-wiping ribbon contacts that assure positive contact of both mating members. Blue Ribbon type available in 8, 16, 24, and 32 contact sizes for rack and panel applications. Smaller Micro Ribbon type used in miniaturization programs, available in 14, 24, 36 and 50 contact sizes in either rack and panel or cable to chassis types. For complete information, including dimensional data, contact your local Cinch office or write direct for literature on the Blue-Ribbon and Micro-Ribbon connectors.

*Registered trademarks of Amphenol-Borg Electronics Corp.



CINCH MICRO-CONNECTORS

Rectangular multiple-contact connectors available in a wide range of sizes, contact arrangements and terminations. Most plugs and sockets included are available for either rack and panel mounting or cable applications. Used in such fields as communications, radio, microwave and test equipment. For complete details, request the Cinch Micro-Connector Catalog.



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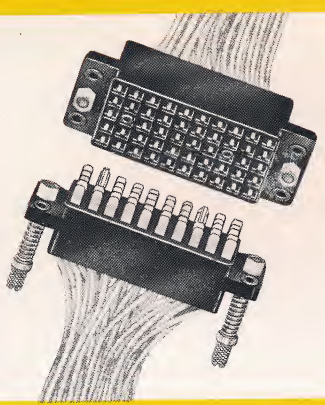
Ideally suited for applications where a reliable multiple-contact connector is needed for use in a limited area. Hinge and latch principle permits one-hand operation. Nine sizes available—from 20 to 100 contacts—with either of two spring lock arrangements. Hoods with cable clamp in top or end also available for each connector size. For complete information, including dimensional drawings, materials, etc., request the Cinch Hinge Connector Catalog.



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*Manufactured under license agreement with Elco Corporation.

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